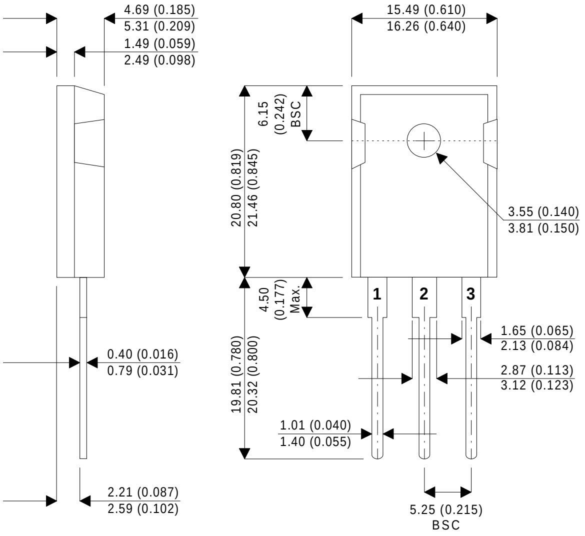
SRF444
SRF445

RF POWER MOSFET

TO-247AD Package Outline.

Dimensions in mm (inches)



N–CHANNEL
ENHANCEMENT MODE
300W – 300V – 13.56MHz

FEATURES

- **Low Cost Common Source RF Package.**
- **Very High Breakdown for Improved Ruggedness.**
- **Low Thermal Resistance.**
- **Nitride Passivated Die for Improved Reliability.**

PIN NO	DEVICE	
	SRF444	**SRF445**
1	**GATE**	**DRAIN**
2	**SOURCE**	**SOURCE**
3	**DRAIN**	**GATE**

Dimensions in Millimeters and (Inches)

NOTE:

The SRF444 and SRF445 comprise a symmetric pair of RF Power Transistors and meet the same electrical specifications. The device pin-outs are the mirror image of each other to allow ease of use as a push-pull pair.

ABSOLUTE MAXIMUM RATINGS (T$_{case}$ = 25°C unless otherwise stated)

V_{DSS}	Drain – Source Voltage	900	V
V_{DGO}	Drain – Gate Voltage	900	
I_D	Continuous Drain Current	6.5	A
V_{GS}	Gate – Source Voltage	±30	V
P_D	Total Power Dissipation @ T_{case} = 25°C	208	W
T_J , T_{STG}	Operating and Storage Junction Temperature Range	-55 to150	°C
T_L	Lead Temperature : 0.063” from Case for 10 Sec.	300	

STATIC ELECTRICAL RATINGS (T_{case} = 25°C unless otherwise stated)

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0V$, $I_D = 250\mu A$	900			V
I_{DSS}	Zero Gate Voltage Drain Current ($V_{GS} = 0V$)	$V_{DS} = V_{DSS}$			250	μA
		$V_{DS} = 0.8V_{DSS}$, $T_C = 125°C$			1000	
I_{GSS}	Gate – Source Leakage Current	$V_{GS} = \pm 30V$, $V_{DS} = 0V$			±100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$, $I_D = 50mA$	2		5	V
g_{fs}	Forward Transconductance	$V_{DS} = 25V$, $I_D = 3.5A$	4	5.7		S
$V_{DS(ON)}$	On State Drain Voltage[1]	$I_{D(ON)} = 3.5A$ $V_{GS} = 10V$			7	V

DYNAMIC CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
C_{iss}	Input Capacitance	$V_{GS} = 0V$		1500	1800	pF
C_{oss}	Output Capacitance	$V_{DS} = 300V$		90	130	
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		28	50	

FUNCTIONAL CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
G_{ps}	Common source Amplifier Power Gain	f = 13.56MHz	17	18.7		dB
η	Drain Efficiency	$V_{GS} = 0V$ $V_{DD} = 300V$		83		%
ψ	Electrical Ruggedness VSWR 20:1	$P_{out} = 300W$	No Degradation in Output Power			

THERMAL CHARACTERISTICS

	Characteristic	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Junction to Case			0.60	°C/W

[1] Pulse Test: Pulse Width < 380μS , Duty Cycle < 2%

CAUTION — Electrostatic Sensitive Devices. Anti-Static Procedures Must Be Followed.